

Access DB# 85272
+ 85293

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Wade W. W. Examiner #: 77604 Date: 1/27/03
Art Unit: 1648 Phone Number 308-8294 Serial Number: 09/670105
Mail Box and Bldg/Room Location: 8007 Results Format Preferred (circle): PAPER DISK E-MAIL
8E12

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Nucleotide Sequences Derived...

Inventors (please provide full names): Moncany et al.

Earliest Priority Filing Date: _____

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

align sequences with electropher.

Jan Delaval
Reference Librarian
Biotechnology & Chemical Library
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jan.delaval@uspto.gov

STAFF USE ONLY

| | Type of Search | Vendors and cost where applicable |
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| Searcher: <u>Car</u> | NA Sequence (#) <input checked="" type="checkbox"/> | STN <input checked="" type="checkbox"/> |
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| Searcher Location: _____ | Structure (#) _____ | Questel/Orbit _____ |
| Date Searcher Picked Up: <u>1/27/03</u> | Bibliographic <input checked="" type="checkbox"/> | Dr.Link _____ |
| Date Completed: <u>1/27/03</u> | Litigation _____ | Lexis/Nexis _____ |
| Searcher Prep & Review Time: _____ | Fulltext _____ | Sequence Systems <input checked="" type="checkbox"/> |
| Clerical Prep Time: <u>15</u> | Patent Family _____ | WWW/Internet _____ |
| Online Time: <u>44</u> | Other _____ | Other (specify) _____ |

Best Available Copy

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| 5 | -18 | -30 | -30 | -31 | -30 | -35 | -35 | 5 | 5 | 1 | -10 | -10 | -11 |
| 6 | -25 | -25 | -30 | -30 | -30 | -30 | -30 | -5 | 1 | -5 | -5 | -5 | -10 |
| 7 | -25 | -25 | -30 | -30 | -30 | -30 | -26 | -5 | -5 | -5 | -5 | -5 | -10 |
| 8 | -40 | -40 | -39 | -45 | -41 | -41 | -41 | -10 | -10 | -6 | -20 | -20 | -25 |
| 9 | -40 | -36 | -40 | -45 | -40 | -41 | -41 | -5 | -10 | -10 | -20 | -20 | -25 |
| 10 | -25 | -25 | -23 | -30 | -30 | -30 | -26 | -5 | -5 | -5 | -5 | -5 | -10 |
| 11 | -25 | -15 | -24 | -30 | -30 | -30 | -26 | -5 | -5 | -5 | -5 | -5 | -10 |
| 12 | -25 | -25 | -30 | -23 | -26 | -30 | -30 | -5 | -5 | -5 | -5 | -5 | -6 |
| 13 | -15 | -25 | -30 | -24 | -26 | -30 | -30 | -5 | -5 | -5 | -5 | -5 | -6 |
| 14 | -30 | -30 | -31 | -35 | -35 | -35 | -35 | 6 | 4 | 6 | -10 | -10 | -10 |
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| 23 | -5 | -5 | -10 | -10 | -6 | -10 | -10 | -25 | -25 | -15 | -15 | -15 | -10 |
| 24 | -5 | -5 | -10 | -10 | -10 | -10 | -10 | -25 | -25 | -14 | -15 | -15 | -6 |
| 25 | -10 | -10 | -7 | -15 | -15 | -15 | -15 | -20 | -20 | -20 | -10 | -10 | -5 |
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| 28 | -10 | -10 | -15 | -8 | -15 | -15 | -15 | -20 | -20 | -20 | -3 | -3 | -1 |
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| 30 | -15 | -15 | -14 | -20 | -16 | -11 | -11 | -15 | -15 | -15 | -5 | -5 | 4 |
| 31 | -25 | -25 | -30 | -21 | -30 | -30 | -30 | -5 | -5 | -5 | -5 | -5 | -10 |
| 32 | -25 | -25 | -30 | -20 | -30 | -30 | -30 | -5 | -5 | -5 | -5 | -5 | -10 |

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| 35 | -25 | -19 | -26 | -30 | -30 | -30 | -30 | -5 | -5 | -5 | -5 | -5 | -5 | -6 |
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| 37 | -6 | -10 | -10 | -11 | -15 | -15 | -20 | -13 | -20 | -10 | -10 | -5 | -5 | |
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| 60 | | | | | | | | | | | | | | |
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| 22 | -7 | -5 | -5 | -5 | -5 | 7 | -5 | -4 |
| 23 | -10 | -5 | -5 | -5 | -5 | 4 | -5 | -6 |
| 24 | -10 | -5 | -5 | -5 | -5 | 3 | -5 | -10 |
| 25 | -20 | 3 | 4 | 7 | -10 | -5 | 9 | -11 |
| 26 | -20 | 4 | 5 | 7 | -10 | -5 | 9 | -11 |
| 27 | -20 | 4 | 3 | 7 | -10 | -5 | 2 | -15 |
| 28 | -20 | 5 | 3 | 7 | -10 | -5 | 3 | -15 |
| 29 | -21 | -5 | -5 | -5 | -11 | -10 | -5 | -16 |
| 30 | -25 | -5 | -5 | -5 | -15 | -10 | -5 | -16 |
| 31 | -29 | -15 | -15 | -15 | -25 | -20 | -15 | -30 |
| 32 | -29 | -15 | -15 | -15 | -25 | -20 | -15 | -30 |
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| 34 | -35 | -15 | -15 | -15 | -25 | -20 | -15 | -30 |

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|----|-----|-----|-----|-----|-----|-----|-----|-----|
| 35 | -35 | -15 | -15 | -15 | -25 | -20 | -15 | -30 |
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| 37 | -20 | 7 | 4 | 5 | -10 | -5 | 4 | -15 |
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| 39 | -15 | -5 | -5 | -5 | -5 | 8 | -5 | -10 |
| 40 | 11 | -20 | -20 | -20 | -10 | -15 | -20 | -5 |
| 41 | -25 | -5 | -5 | -5 | -15 | -10 | -5 | -20 |
| 42 | -25 | -5 | -5 | -5 | -15 | -10 | -5 | -12 |
| 43 | -25 | -5 | -5 | -5 | -15 | -5 | 2 | -16 |
| 44 | -31 | -20 | -20 | -20 | -30 | -21 | -13 | -35 |
| 45 | -26 | -10 | -10 | -10 | -20 | -15 | -10 | -25 |
| 46 | -5 | -15 | -15 | -15 | -5 | -10 | -15 | 5 |
| 47 | 3 | -15 | -15 | -15 | 1 | -10 | -15 | 10 |
| 48 | -16 | 7 | 5 | 6 | -10 | -5 | 7 | -6 |
| 49 | -10 | -10 | -10 | -10 | 8 | -5 | -10 | -5 |
| 50 | -10 | -10 | -10 | -10 | 3 | 2 | -10 | -5 |
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| 56 | -35 | -20 | -20 | -20 | -26 | -17 | -20 | -31 |
| 57 | -40 | -20 | -20 | -20 | -30 | -25 | -20 | -35 |
| 58 | -25 | -10 | -10 | -10 | -20 | -15 | -10 | -25 |
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| 60 | -25 | -5 | -5 | 2 | -11 | -10 | -5 | -20 |
| 61 | | -20 | -20 | -20 | -10 | -5 | -20 | -5 |
| 62 | | | 4 | 9 | -10 | 5 | 7 | -15 |
| 63 | | | | 3 | -10 | -1 | 5 | -15 |
| 64 | | | | | -10 | -5 | 9 | -15 |
| 65 | | | | | | -5 | -10 | -5 |
| 66 | | | | | | -5 | -10 | -5 |
| 67 | | | | | | | | -15 |
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GENALIGN - Multiple Sequence Alignment Program
Release 5.4

Mon 27 Jan 103 18:19:43-PSR

Solution Parameters:

Nucleic Alphabet = Identity
Output Line Length = 80
Compress = Off
Histogram = Off
Randomization = Off
AMINO-Res-length = 2
Deletion-weight = 5.00
Length-factor = 0
Matching-weight = 1.00
NUCLEIC-Res-length = 4
Spread-factor = 50

Clustered order of selected sequences:

| | |
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| 8. US-09-670-105-8 | (1-17) |
| 9. US-09-670-105-9 | (1-17) |
| 1. US-09-670-105-1 | (1-18) |
| 2. US-09-670-105-2 | (1-18) |
| 57. US-09-670-105-57 | (1-19) |
| 59. US-09-670-105-59 | (1-21) |
| 35. US-09-670-105-35 | (1-20) |
| 34. US-09-670-105-34 | (1-20) |
| 33. US-09-670-105-33 | (1-20) |
| 18. US-09-670-105-18 | (1-19) |
| 17. US-09-670-105-17 | (1-19) |
| 16. US-09-670-105-16 | (1-19) |
| 56. US-09-670-105-56 | (1-19) |
| 4. US-09-670-105-4 | (1-19) |
| 3. US-09-670-105-3 | (1-19) |
| 5. US-09-670-105-5 | (1-19) |
| 44. US-09-670-105-44 | (1-19) |
| 14. US-09-670-105-14 | (1-19) |
| 15. US-09-670-105-15 | (1-19) |
| 55. US-09-670-105-55 | (1-19) |
| 7. US-09-670-105-7 | (1-20) |
| 6. US-09-670-105-6 | (1-20) |
| 10. US-09-670-105-10 | (1-20) |
| 11. US-09-670-105-11 | (1-20) |
| 13. US-09-670-105-13 | (1-20) |
| 12. US-09-670-105-12 | (1-20) |
| 32. US-09-670-105-32 | (1-20) |
| 31. US-09-670-105-31 | (1-20) |
| 36. US-09-670-105-36 | (1-21) |
| 19. US-09-670-105-19 | (1-21) |
| 58. US-09-670-105-58 | (1-21) |
| 45. US-09-670-105-45 | (1-21) |
| 60. US-09-670-105-60 | (1-22) |
| 41. US-09-670-105-41 | (1-22) |
| 20. US-09-670-105-20 | (1-22) |
| 43. US-09-670-105-43 | (1-22) |
| 38. US-09-670-105-38 | (1-23) |
| 30. US-09-670-105-30 | (1-22) |
| 29. US-09-670-105-29 | (1-22) |
| 42. US-09-670-105-42 | (1-22) |
| 62. US-09-670-105-62 | (1-23) |
| 64. US-09-670-105-64 | (1-23) |
| 67. US-09-670-105-67 | (1-23) |
| 25. US-09-670-105-25 | (1-23) |
| 26. US-09-670-105-26 | (1-23) |
| 63. US-09-670-105-63 | (1-23) |
| 48. US-09-670-105-48 | (1-23) |

| | |
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| 37. US-09-670-105-37 | (1-23) |
| 27. US-09-670-105-27 | (1-23) |
| 28. US-09-670-105-28 | (1-23) |
| 39. US-09-670-105-39 | (1-24) |
| 66. US-09-670-105-66 | (1-24) |
| 24. US-09-670-105-24 | (1-24) |
| 23. US-09-670-105-23 | (1-24) |
| 21. US-09-670-105-21 | (1-24) |
| 22. US-09-670-105-22 | (1-24) |
| 50. US-09-670-105-50 | (1-25) |
| 53. US-09-670-105-53 | (1-26) |
| 68. US-09-670-105-68 | (1-26) |
| 47. US-09-670-105-47 | (1-26) |
| 52. US-09-670-105-52 | (1-26) |
| 51. US-09-670-105-51 | (1-26) |
| 49. US-09-670-105-49 | (1-25) |
| 65. US-09-670-105-65 | (1-25) |
| 46. US-09-670-105-46 | (1-26) |
| 54. US-09-670-105-54 | (1-26) |
| 61. US-09-670-105-61 | (1-27) |
| 40. US-09-670-105-40 | (1-27) |

Needleman-Wunsch Alignment: (listed in Clustered order)

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| US-09-670-1 | TG CATAGCTGC | CTGGTG | 9 |
| US-09-670-1 | TGGGCGCCGAAAC | AGGAGC | 1 |
| US-09-670-1 | TGGGCGCTGAAAC | AGGAGC | 2 |
| US-09-670-1 | TTCATTCCTTC | TGCG Tgg | 57 |
| US-09-670-1 | TCAGTCCGCC | TTTCCTTC | 57 |
| US-09-670-1 | ACGCGCCCTTC | CCCTTCCA | 35 |
| US-09-670-1 | ACGCGCCCTTC | TCCTTCCA | 34 |
| US-09-670-1 | ACGCGCCCTTC | CCCTTCCA | 33 |
| US-09-670-1 | CCACATTTCCA | GCACCCCT | 18 |
| US-09-670-1 | CCACATTTCCA | GCAGCCCT | 17 |
| US-09-670-1 | CCACATTTCCA | GCATCCCT | 16 |
| US-09-670-1 | CCAGCAAGAAA | GAATGAA | 4 |
| US-09-670-1 | GGCCCGGCGGAAA | GAATAA | 3 |
| US-09-670-1 | GGCCAGGGGAGAAA | GAATAA | 3 |
| US-09-670-1 | GGCCAGGGGAGAAA | GAATAA | 3 |
| US-09-670-1 | GGCCAGGGGAGAAA | GAATAA | 3 |
| US-09-670-1 | ATGTCAGATCCA | GgGAGA | 44 |
| US-09-670-1 | AGGCTGTGAAA | tgTGg | 14 |
| US-09-670-1 | AGGCTGTGAAA | GTGG | 15 |
| US-09-670-1 | TATAACAGAGAG | GTGG | 7 |
| US-09-670-1 | TGCCACACATATGTTTA | | 6 |
| US-09-670-1 | TGCCATACAAATGTTTA | | 10 |
| US-09-670-1 | CTTTCATGCGCTGATG | | 7 |
| US-09-670-1 | CTTTCATGCGCTGATG | | 7 |

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US-09-670- 1 CACCAAGCAGCTATGCAAG
US-09-670- 1 CACCAAGCAGCTATGCAAG
US-09-670- 1 TG GAAAGGTGAAGGACAGT
US-09-670- 1 TG GAAAGGTGAAGGACAGT
US-09-670- 1 AGACATCTTCGCGCGCTG
US-09-670- 1 GATACA TggaaCaagCCcCaag
US-09-670- 1 aAAGaAaaGGGG GactCGA
US-09-670- 1 cctG GAAGGAGAGG AgGAGGA
US-09-670- 1 aAGtC cccAGGcGAaAGtccc
US-09-670- 1 T AgcaCT tATtCCcttGCTT
US-09-670- 1 TC CaTtT CtTgTtCCtCCtCTT
US-09-670- 1 CC CTgTtC aTcATgCCagTAT
US-09-670- 1 CCT TcttCCtTtCtTAagTATAT
US-09-670- 1 CCT TtGtTgTgTgTtACcCATG
US-09-670- 1 CATG gGtaccAGcacaCaagG
US-09-670- 1 aAAG CaaggAAaataAgTgCTA
US-09-670- 1 gCAGcCAACTAAtcAlCTgTA
US-09-670- 1 cTtAAGtCtCtclAAAGCTCTA
US-09-670- 1 actACaGatCATCAAtatCCcAA
US-09-670- 1 TGGACTGTCAATGACATACAGAA
US-09-670- 1 TGGACTGTCAATGATATACAGAA
US-09-670- 1 TAcAatCaATtAgTtGtGtGc
US-09-670- 1 A ATgCagctctAgcaGAAGAAa
US-09-670- 1 ATAT actTagaAaGGAAGAAg
US-09-670- 1 TTCTG TATGTCAATGACAGTCA
US-09-670- 1 TTCTG TATGTCAATGACAGTCA
US-09-670- 1 ACCTGAGAcagcAGGAGCTTCCA
US-09-670- 1 AGCAGaGacagTgCCaTgagag
US-09-670- 1 TTGgtC CA TCCATTCCTGGCTTAA
US-09-670- 1 TTGGGC CA TCCATTCCTGGCTTAA
US-09-670- 1 TANAGC CAGG AATGATGGCCCAA
US-09-670- 1 TANAGC CAGG AATGATGGCCCAA
US-09-670- 1 A AttctG GgtccctC ctGAGgAt
US-09-670- 1 ATG GGTGGCAA GTGTCaAaAAGTAg
US-09-670- 1 ATG GGTGGCAA TGTCAaAaAGTAg
US-09-670- 1 GGG GCaCaATAA TglatgGAATtGg
US-09-670- 1 GGGtcttGg gAg CagCAGAAgCac

```

Handwritten scores and annotations:

- US-09-670- 1 12 7
- US-09-670- 1 32 7
- US-09-670- 1 31 7
- US-09-670- 1 58
- US-09-670- 1 43
- US-09-670- 1 62
- US-09-670- 1 25 7
- US-09-670- 1 26 7
- US-09-670- 1 63
- US-09-670- 1 48 *
- US-09-670- 1 27 7
- US-09-670- 1 28 7
- US-09-670- 1 39
- US-09-670- 1 66
- US-09-670- 1 24 7
- US-09-670- 1 25 7
- US-09-670- 1 21 7
- US-09-670- 1 22
- US-09-670- 1 53 7
- US-09-670- 1 68
- US-09-670- 1 52

Alignment score = -1063.00

Scoring matrix:

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|----|----|---|----|----|----|----|----|----|----|----|----|----|
| 1 | 17 | 2 | 3 | 2 | -3 | -3 | 0 | 1 | -5 | -4 | -4 | |
| 2 | | 2 | 3 | 2 | -3 | -3 | 0 | 1 | -4 | -3 | -5 | |
| 3 | | | 17 | 18 | 3 | 2 | -3 | -5 | -2 | -3 | 4 | |
| 4 | | | | 17 | 4 | 3 | -2 | -4 | -2 | -2 | 4 | |
| 5 | | | | | 4 | 3 | -3 | -5 | -2 | -2 | 5 | |
| 6 | | | | | | 17 | -7 | -7 | 2 | 3 | 5 | |
| 7 | | | | | | | -7 | -6 | 3 | 4 | 5 | |
| 8 | | | | | | | | 14 | 2 | -1 | -7 | |
| 9 | | | | | | | | | -1 | 2 | -6 | |
| 10 | | | | | | | | | | 16 | 6 | |
| 11 | | | | | | | | | | | 5 | |
| 12 | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | |
| 19 | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | |
| 21 | | | | | | | | | | | | |
| 22 | | | | | | | | | | | | |
| 23 | | | | | | | | | | | | |
| 24 | | | | | | | | | | | | |

US-09-670- 1 GTGCTTcctG ctG CteccAaGAAccC

US-09-670- 1 aT CctCAGGA ggGg aCCcAaAaAT

US-09-670- 1 gT AAGTAgLaCA tGT AaTGAACCT

US-09-670- 1 cCAATtccCaTAcAT ATtGtGCCCC

US-09-670- 1 CtAcTtTtGACCcACTTGCcA cCCAT

US-09-670- 1 gATATGAaAaACAgatGcAGtGAT

US-09-670- 1 tATggaGAGgAAaagaGatGgAT

consensus -t-aatctgcagtc-gtccaaggtcaaa

Handwritten scores and annotations:

- US-09-670- 1 51 *
- US-09-670- 1 54

U I <
0 I 0 IntellicGenetics
> 0 <

GENALIGN - Multiple Sequence Alignment Program
Release 5.4

Mon 27 Jan 103 18:16:28-PSR

Solution Parameters:

Nucleic Alphabet = Identity
Output Line Length = 80
Compress = Off
Histogram = Off
Randomization = Off
AMINO-Res-Length = 2
Deletion-Weight = 5.00
Length-Factor = 0
Matching-Weight = 1.00
NUCLEIC-Res-Length = 4
Spread-Factor = 50

Clustered order of selected sequences:

61. US-09-670-105-61 (1-27)
40. US-09-670-105-40 (1-27)
53. US-09-670-105-53 (1-26)
68. US-09-670-105-68 (1-26)
47. US-09-670-105-47 (1-26)
52. US-09-670-105-52 (1-26)
51. US-09-670-105-51 (1-26)
54. US-09-670-105-54 (1-26)
46. US-09-670-105-46 (1-26)
23. US-09-670-105-23 (1-24)
24. US-09-670-105-24 (1-24)
21. US-09-670-105-21 (1-24)
22. US-09-670-105-22 (1-24)
66. US-09-670-105-66 (1-24)
39. US-09-670-105-39 (1-24)
49. US-09-670-105-49 (1-25)
50. US-09-670-105-50 (1-25)
65. US-09-670-105-65 (1-25)
48. US-09-670-105-48 (1-23)
37. US-09-670-105-37 (1-23)
27. US-09-670-105-27 (1-23)
28. US-09-670-105-28 (1-23)
64. US-09-670-105-64 (1-23)
62. US-09-670-105-62 (1-23)
67. US-09-670-105-67 (1-23)
25. US-09-670-105-25 (1-23)
26. US-09-670-105-26 (1-23)
38. US-09-670-105-38 (1-23)
63. US-09-670-105-63 (1-23)
20. US-09-670-105-20 (1-22)
43. US-09-670-105-43 (1-22)
29. US-09-670-105-29 (1-22)
30. US-09-670-105-30 (1-22)
41. US-09-670-105-41 (1-22)
60. US-09-670-105-60 (1-22)
42. US-09-670-105-42 (1-22)
45. US-09-670-105-45 (1-21)
58. US-09-670-105-58 (1-21)
58. US-09-670-105-58 (1-21)
19. US-09-670-105-19 (1-21)
36. US-09-670-105-36 (1-21)
31. US-09-670-105-31 (1-20)
32. US-09-670-105-32 (1-20)
11. US-09-670-105-11 (1-20)
10. US-09-670-105-10 (1-20)
34. US-09-670-105-34 (1-20)
33. US-09-670-105-33 (1-20)

35. US-09-670-105-35 (1-20)
7. US-09-670-105-7 (1-20)
6. US-09-670-105-6 (1-20)
12. US-09-670-105-12 (1-20)
13. US-09-670-105-13 (1-20)
55. US-09-670-105-55 (1-19)
44. US-09-670-105-44 (1-19)
15. US-09-670-105-15 (1-19)
14. US-09-670-105-14 (1-19)
56. US-09-670-105-56 (1-19)
17. US-09-670-105-17 (1-19)
16. US-09-670-105-16 (1-19)
18. US-09-670-105-18 (1-19)
3. US-09-670-105-3 (1-19)
5. US-09-670-105-5 (1-19)
4. US-09-670-105-4 (1-19)
57. US-09-670-105-57 (1-19)
1. US-09-670-105-1 (1-18)
2. US-09-670-105-2 (1-18)
8. US-09-670-105-8 (1-17)
9. US-09-670-105-9 (1-17)

Region Alignment: (Listed in Clustered order)

US-09-670- 1 gATtAtGnaaAcAgatGcagGtGat 61
US-09-670- 1 tATgAGGAGgnaAaAgatGtGatAGT 61
US-09-670- 1 ATGGGTGCAAGTGTCTCAAAAGTAG 53
US-09-670- 1 ATGGGTGCAAGTGTCTCAAAAGTAG 68
US-09-670- 1 GGGGcacaatATGctatGtGnaATtGg 47
US-09-670- 1 GGGTcttGgAGcagcAGcAGcAGcAGc 52
US-09-670- 1 GTGCTTctGctGctGctGctGctGctGctGct 51
US-09-670- 1 CTACTTtTtGtGcACctGtGcAGccat 54
US-09-670- 1 CCAATtCCATtACATtATtGtGctGctGct 46
US-09-670- 1 TTGgCCATtCCATtCCATtCCATtCCATtCCATt 23
US-09-670- 1 TTGgCCATtCCATtCCATtCCATtCCATtCCATt 24
US-09-670- 1 TAAAGCCAGAAATGATGATGATGATGATGATGATGAT 21
US-09-670- 1 TAAAGCCAGAAATGATGATGATGATGATGATGATGAT 22
US-09-670- 1 AGCAGaAGaAGcAGTGGcAGcAGcAGcAGcAGcAGcAGc 66
US-09-670- 1 AGcTtGAGaAGcAGcAGcAGcAGcAGcAGcAGcAGcAGc 39
US-09-670- 1 AtcCTCAGAGAGgAGcAGcAGcAGcAGcAGcAGcAGcAGc 49
US-09-670- 1 AatTCTGAGcAGcAGcAGcAGcAGcAGcAGcAGcAGcAGc 50
US-09-670- 1 gtaAGtAGtAGcAGcAGcAGcAGcAGcAGcAGcAGcAGcAGc 65
US-09-670- 1 AatgCAGcAGcAGcAGcAGcAGcAGcAGcAGcAGcAGcAGc 48
US-09-670- 1 ATAtACtTAgAaAGcAGcAGcAGcAGcAGcAGcAGcAGcAGc 31
US-09-670- 1 TTCTGTATGTCATTTGACAGTCCA 27
US-09-670- 1 TTCTGTATGTCATTTGACAGTCCA 28
US-09-670- 1 cTtAGCTCTCTTAAAGcAGcAGcAGcAGcAGcAGcAGcAGcAGc 64
US-09-670- 1 gCAGACcAGcAGcAGcAGcAGcAGcAGcAGcAGcAGcAGcAGc 62

| | | | |
|------------|---|--------------------------|----|
| US-09-670- | 1 | actacagalcataatccaa | 67 |
| US-09-670- | 1 | tggacatgctcaatgacatacaga | 25 |
| US-09-670- | 1 | tggacatgctcaatgacatacaga | 26 |
| US-09-670- | 1 | cccttcctcttctcctcctc | 38 |
| US-09-670- | 1 | tacagatgaaatagttgctc | 63 |
| US-09-670- | 1 | tccatgttctgtcctcctc | 20 |
| US-09-670- | 1 | cccttcctcctcctcctcctc | 43 |
| US-09-670- | 1 | catggatgctcagcacacaaag | 29 |
| US-09-670- | 1 | ccttctgtgtcgtgacccatg | 30 |
| US-09-670- | 1 | tacacatcattcctcctcctc | 41 |
| US-09-670- | 1 | aaagtcctccacggaatctcc | 60 |
| US-09-670- | 1 | aaagcagaggaatctacgcta | 42 |
| US-09-670- | 1 | ccttgagaggagagagagga | 45 |
| US-09-670- | 1 | aaaagaaaaggaggagctgga | 58 |
| US-09-670- | 1 | aaaagaaaaggaggagctgga | 58 |
| US-09-670- | 1 | gatacagatggaacagccccag | 19 |
| US-09-670- | 1 | agaaactcttcggggccgctg | 36 |
| US-09-670- | 1 | tggaaagctgaaaggagcact | 31 |
| US-09-670- | 1 | tggaaagctgaaaggagcact | 32 |
| US-09-670- | 1 | cttgcgatgctcctcctcctc | 11 |
| US-09-670- | 1 | cttgcgatgctcctcctcctc | 10 |
| US-09-670- | 1 | actgaccccttctccttcca | 34 |
| US-09-670- | 1 | actgaccccttctccttcca | 33 |
| US-09-670- | 1 | actgaccccttctccttcca | 35 |
| US-09-670- | 1 | tggccacacatactgcttga | 7 |
| US-09-670- | 1 | tggccacacatactgcttga | 6 |
| US-09-670- | 1 | catcaagcagccatgacaaag | 12 |
| US-09-670- | 1 | catcaagcagccatgacaaag | 13 |
| US-09-670- | 1 | tattacaagagatgcttgg | 45 |
| US-09-670- | 1 | atctcagatccagcagaga | 44 |
| US-09-670- | 1 | aggcctgttggaagagctg | 15 |
| US-09-670- | 1 | aggcctgttggaagagctg | 14 |
| US-09-670- | 1 | ccagcagaagaataagaa | 56 |
| US-09-670- | 1 | ccacattttccagagccct | 17 |
| US-09-670- | 1 | ccacattttccagagccct | 16 |
| US-09-670- | 1 | ccacattttccagagccct | 18 |
| US-09-670- | 1 | gcccagagggaagaaaaa | 3 |

[illegible]

Alignment score = -375.00

Scoring matrix:

[illegible]

[illegible]

| | | | | | | | | | | | | |
|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 33 | -19 | -15 | -19 | -23 | -22 | -20 | -1 | 1 | 1 | -1 | 3 | 0 |
| 34 | -20 | -15 | -18 | -24 | -22 | -20 | -2 | 0 | 2 | -1 | 4 | 0 |
| 35 | -19 | -14 | -18 | -24 | -23 | -20 | -2 | 0 | 1 | -1 | 3 | 0 |
| 36 | -11 | -12 | -17 | -16 | -15 | -18 | -3 | -5 | -2 | 7 | 3 | 5 |
| 37 | 0 | -2 | -6 | -2 | -5 | -6 | -7 | -7 | -13 | -1 | -7 | 3 |
| 38 | -2 | 0 | -2 | -6 | -6 | -6 | -14 | -13 | -7 | -7 | -1 | 1 |
| 39 | 1 | 1 | -1 | -1 | -1 | -1 | -15 | -15 | -20 | -2 | -7 | 1 |
| 40 | 2 | -1 | 0 | 3 | 4 | 0 | -24 | -25 | -34 | -17 | -24 | -16 |
| 41 | -7 | -4 | -10 | -13 | -13 | -10 | -8 | -12 | -1 | -2 | 5 | 3 |
| 42 | -4 | -7 | -13 | -10 | -10 | -13 | -6 | -1 | -12 | 5 | -2 | 7 |
| 43 | -6 | -4 | -9 | -9 | -11 | -4 | -7 | -8 | -6 | -1 | 4 | 4 |
| 44 | -17 | -17 | -23 | -22 | -23 | -26 | 7 | 3 | 5 | -3 | -6 | -7 |
| 45 | -7 | -11 | -18 | -12 | -14 | -18 | -1 | 1 | -6 | 9 | 2 | 1 |
| 46 | -2 | 2 | 8 | 5 | 4 | 9 | -23 | -25 | -23 | -18 | -13 | -7 |
| 47 | 2 | -2 | 5 | 8 | 9 | 4 | -22 | -23 | -25 | -13 | -18 | -13 |
| 48 | 0 | 1 | -6 | -3 | -4 | -8 | -9 | -10 | -12 | -1 | -7 | 4 |
| 49 | | 10 | 7 | 5 | 6 | 2 | -22 | -20 | -25 | -10 | -12 | -5 |
| 50 | | | 5 | 7 | 2 | 6 | -22 | -24 | -20 | -12 | -10 | -9 |
| 51 | | | | 10 | 7 | 7 | -29 | -28 | -25 | -20 | -18 | -8 |
| 52 | | | | | 7 | 7 | -26 | -25 | -28 | -18 | -20 | -10 |
| 53 | | | | | | 6 | -24 | -25 | -27 | -15 | -18 | -9 |
| 54 | | | | | | | -27 | -27 | -25 | -18 | -15 | -12 |
| 55 | | | | | | | 3 | 7 | 0 | 0 | -5 | -6 |
| 56 | | | | | | | | 0 | 0 | 0 | -4 | -7 |
| 57 | | | | | | | | | -4 | 0 | -11 | |
| 58 | | | | | | | | | | 4 | 4 | |
| 59 | | | | | | | | | | | 0 | |
| 60 | | | | | | | | | | | | |
| 61 | | | | | | | | | | | | |
| 62 | | | | | | | | | | | | |
| 63 | | | | | | | | | | | | |
| 64 | | | | | | | | | | | | |
| 65 | | | | | | | | | | | | |
| 66 | | | | | | | | | | | | |
| 67 | | | | | | | | | | | | |
| 68 | | | | | | | | | | | | |
| 1 | -33 | -17 | -17 | -17 | -15 | -26 | -20 | -18 | -29 | | | |
| 2 | -33 | -17 | -17 | -17 | -15 | -25 | -19 | -17 | -28 | | | |
| 3 | -29 | -14 | -15 | -13 | -21 | -15 | -12 | -24 | | | | |
| 4 | -31 | -13 | -16 | -11 | -21 | -16 | -12 | -24 | | | | |
| 5 | -29 | -13 | -14 | -13 | -20 | -15 | -11 | -24 | | | | |
| 6 | -26 | -5 | -5 | -5 | -15 | -12 | -5 | -22 | | | | |
| 7 | -26 | -5 | -5 | -4 | -16 | -12 | -6 | -21 | | | | |
| 8 | -39 | -22 | -19 | -23 | -31 | -23 | -23 | -33 | | | | |
| 9 | -38 | -22 | -19 | -23 | -31 | -21 | -23 | -34 | | | | |
| 10 | -23 | -8 | -8 | -6 | -16 | -11 | -9 | -19 | | | | |
| 11 | -22 | -7 | -6 | -7 | -16 | -8 | -8 | -19 | | | | |
| 12 | -23 | -8 | -8 | -7 | -13 | -10 | -4 | -20 | | | | |
| 13 | -22 | -6 | -7 | -6 | -14 | -9 | -4 | -19 | | | | |
| 14 | -31 | -12 | -10 | -11 | -22 | -13 | -12 | -21 | | | | |
| 15 | -30 | -13 | -10 | -11 | -22 | -14 | -13 | -21 | | | | |
| 16 | -32 | -10 | -12 | -10 | -18 | -17 | -7 | -28 | | | | |
| 17 | -31 | -11 | -11 | -9 | -18 | -17 | -8 | -28 | | | | |
| 18 | -32 | -11 | -12 | -10 | -19 | -18 | -8 | -28 | | | | |
| 19 | -18 | -4 | 0 | -2 | -9 | -5 | 1 | -15 | | | | |
| 20 | -17 | 3 | 5 | 1 | -6 | -3 | 1 | -12 | | | | |
| 21 | -5 | 2 | 7 | 3 | 5 | 7 | 6 | -2 | | | | |
| 22 | -5 | 1 | 7 | 2 | 6 | 7 | 5 | -1 | | | | |
| 23 | -6 | 7 | 2 | 6 | 4 | 4 | 3 | -1 | | | | |
| 24 | -7 | 7 | 1 | 6 | 3 | 3 | 3 | -1 | | | | |
| 25 | -9 | 3 | 4 | 7 | 1 | 6 | 9 | -1 | | | | |
| 26 | -9 | 4 | 5 | 7 | 1 | 5 | 9 | -1 | | | | |
| 27 | -7 | 4 | 3 | 7 | 1 | 3 | 2 | -6 | | | | |
| 28 | -8 | 5 | 3 | 7 | 2 | 3 | 3 | -7 | | | | |
| 29 | -14 | 2 | 0 | 2 | -4 | -1 | 2 | -8 | | | | |
| 30 | -15 | 0 | 2 | 4 | -7 | -4 | 3 | -10 | | | | |
| 31 | -22 | -7 | -5 | -8 | -15 | -10 | -8 | -19 | | | | |
| 32 | -21 | -6 | -6 | -7 | -15 | -10 | -7 | -19 | | | | |
| 33 | -28 | -5 | -7 | -4 | -16 | -12 | -3 | -22 | | | | |
| 34 | -28 | -4 | -8 | -5 | -17 | -12 | -3 | -22 | | | | |

